

REMARKS

Applicants respectfully request reconsideration of this application, and reconsideration of the Office Action dated April 17, 2003 (Paper No. 11). Claims 11 and 14 remain pending in this application. While claims 12 and 13 are cancelled by this Amendment, Applicants reserve the right to pursue the subject matter of claims 12 and 13 in a continuing application. No new matter is incorporated by this Amendment.

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In the Office Action, the rejection of claims 11-14 under 35 U.S.C. § 103(a) as purportedly obvious based on Van Os et al. (U.S. Pat. No. 5,792,272) in view of Shinjiro (U.S. Pat. No. 4,768,921) was maintained.

The Office Action asserted that Van Os was used as a primary reference to teach a pump below a susceptor. The Office Action conceded that Van Os does not teach the specific details of the pump. However, the Office Action further asserted that Figs. 1, 3, and 4 of Shinjiro all illustrate toroidal shaped pumps with motors (driving mechanisms). The Office Action thus maintained that modifying the invention of Van Os by employing the pump of Shinjiro renders the claimed invention obvious. Applicants again respectfully traverse.

Applicants respectfully submit that the asserted combination of Van Os and Shinjiro fails to teach each and every feature of the claimed invention. Specifically, the asserted combination fails to disclose at least two important details of claims 11 and 14. The first such detail is Applicants' driving mechanism. The second goes to the nature of the vacuum pump (its "toroidal" shape).

Both claims 11 and 14 recite a driving mechanism arranged below the susceptor, for moving the susceptor up and down. Hence, the claims make clear that the defined driving mechanism is not a motor for rotating the vacuum pump, but rather a device for moving the

susceptor up and down. Van Os fails to teach or fairly suggest Applicants' recited arrangement with such a driving mechanism for moving the susceptor up and down. Van Os discloses a wafer susceptor 20. The arm member 21 and plate 29 in Fig. 1 of Van Os support the susceptor, but they do not move the susceptor 20 up and down. Moreover, the arm member 21 and plate 29 are located beside the wafer susceptor and are not arranged below the wafer susceptor. Hence, Van Os fails to teach or fairly suggest the driving mechanism as defined by the claims.

Shinjiro, like Van Os, also fails to describe the claimed driving mechanism. In Shinjiro, the motor denoted by reference numbers 13-18 is for rotating the vacuum pump, not for moving the susceptor up and down. Hence, Shinjiro fails to teach or fairly suggest the driving mechanism as defined in the present claims.

Applicants now discuss their toroidal shaped vacuum pump. Claim 11 expressly recites "a toroidal shaped vacuum pump including a motor therein", and further recites that "at least a part of the driving mechanism" is "received within the column-shaped space surrounded by the toroidal vacuum pump". Claim 14 requires that "the vacuum pump" be "arranged around at least a portion of the driving mechanism coaxially therewith". The Office Action is understood to assert that the vacuum pump of claims 11 and 14 corresponds to the Shinjiro pump apparatus having stator blades 10 and rotor blades 11 (think of this as one part of the Shinjiro pump), and having a motor rotor 17 and a motor stator 18 (think of this as the other part) as shown in Fig. 1 of Shinjiro. These two parts of the Shinjiro pump apparatus do not suggest the structure of Applicants' claimed (toroidal) pump. A "toroid" is "a surface generated by the rotation of a plane closed curve about an axis lying in its plane and not intersecting it" according to Webster's Third New International Dictionary. Thus, the toroidal shape must have a hole which extends from one side to the other side thereof. The pump apparatus disclosed by Shinjiro with the stator blades and rotor blades (the first part), and the motor rotor and the motor stator (the second part)

leaves no such penetrating hole. The motor part occupies the space inside the blades. Hence, Shinjiro fails to teach or fairly suggest a vacuum pump that surrounds (claim 11) or is arranged around (claim 14) at least some part (claim 11) or portions (claim 14) of the driving mechanism. As express from claim 11, such a pump is a toroidal shaped vacuum pump.

The above Remarks overcome this rejection. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

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Applicants respectfully submit that this Amendment and the above remarks obviate the outstanding rejection in this case, thereby placing the application in condition for immediate allowance. Allowance of this application is earnestly solicited.

If any fees are due in connection with the filing of this Amendment, such as fees under 37 C.F.R. §§1.16 or 1.17, please charge the fees to Deposit Account 02-4300; Order No. 033082.0231.

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